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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/736,529	12/13/2000	Gerald W. Mills	723.040US1	8869

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EXAMINER	
TUGBANG, ANTHONY D	

ART UNIT	PAPER NUMBER
3729	

DATE MAILED: 10/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/736,529

Applicant(s)

MILLS, GERALD W.

Examiner

A. Dexter Tugbang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 11-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of the invention of Group I, Claims 1-10 in Paper No. 5 is acknowledged.
2. Claims 11-26 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: A Method of Manufacturing a Microcoil Construction.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 5-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Weatherly 4,639,708.

Regarding Claims 1, 5 and 9, Weatherly discloses a method of forming a microcoil comprising: attaching a trace of conductive material (either one of coils 10, 11) to a film of

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insulating material (flexible sheet 12); rolling the film around a mandrel (core 22) such that the trace of conductive material is circumferentially wrapped around a longitudinal axis (centerline of the core 22).

Regarding Claims 6-8, the mandrel comprises a semi-rigid coaxial line that is hollow and round in cross section (see col. 2, lines 13-15).

6. Claims 1, 5, 6, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by McGaffigan 5,526,561.

McGaffigan discloses a method of forming a microcoil comprising: attaching a trace of conductive material (conductive braids 96) to a film of insulating material (rubber sheet 94); rolling the film around a mandrel 92 such that the trace of conductive material is circumferentially wrapped around a longitudinal axis (see sequence of Figs. 12-13).

Regarding Claims 6 and 8, the mandrel 92 of McGaffigan is round in cross section and has a semi-rigid coaxial line along the bottom surface.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Weatherly or McGaffigan in view of Fukutomi et al 5,426,850.

Weatherly and McGaffigan each teach the claimed manufacturing method as previously discussed, further including adhering a sheet of conductive material to the insulating film. Neither Weatherly nor McGaffigan teach masking a sheet of conducting material with a masking material, etching the sheet of conductive material, removing the masking material, as well as the conductive trace being formed of a copper and the insulating film being formed of polyimide.

Fukutomi teaches that copper and polyimide are each conventional materials for the conductive trace material and insulating material, respectively (see col. 3, line 54 to col. 4, line 19).

Fukutomi further teaches a circuit forming process of masking a sheet of conductive material 28 with a masking material (resist 29), etching the sheet of conducting material and removing the masking material (see sequence of Figs. 3c-3d) to produce a conductive trace pattern with high productivity and high density (see col. 2, lines 24-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of either one of Weatherly or McGaffigan, by utilizing the materials and circuit forming process of Fukutomi, to positively produce a conductive trace with high productivity and high density.

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weatherly in view of McGaffigan.

Weatherly teaches the claimed manufacturing method as previously discussed. Weatherly does not mention affixing a solderable attaching trace to the film and soldering the attaching trace to the mandrel.

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McGaffigan, in an alternative embodiment, shows affixing a soldering attaching trace at the ends of the conductive traces to solder the ends of the traces on the mandrel (see col. 3, lines 62+) for establishing an electrical connection of the conductive traces.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Weatherly, by using the soldering attaching traces, as taught by McGaffigan, to positively establish an electrical connection of the conductive traces.


Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Dexter Tugbang whose telephone number is 703-308-7599. The examiner can normally be reached on Monday - Friday 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0858.


A. Dexter Tugbang
Primary Examiner
Art Unit 3729

September 25, 2003